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MARKED VERSION OF CLAIMS WITH PRESENT STATUS DELINEATED

1. **(Currently Amended)** A process for preparing a ~~modified metallosilicate~~ catalyst composite ~~comprising of a mixture of amorphous silica, alumina and a pore size controlled metallosilicate~~ useful for alkylaromatic conversion, the said process comprising
- contacting an intermediate pore metallosilicate with an organosilicon compound in a solvent for a specific duration and then recovering the solvent
 - combining the organosilicon compound treated metallosilicate with water and then drying the catalyst
 - repeating the steps a) and b) above
 - calcining the catalyst in an oxygen containing atmosphere sufficient to remove the organic material and deposit siliceous matter on the metallosilicate.
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2. **(Original)** A process as claimed in claim 1 wherein said organosilicon compound is water insoluble.
3. **(Original)** A process as claimed in claim 2 wherein the said organosilicon compound is tetraalkoxy silane.
4. **(Original)** A process as claimed in claim 3 wherein the said tetraalkoxy silane is tetraethoxy silane.
5. **(Original)** A process as claimed in claim 1 wherein the said solvent is selected from lower aliphatic alcohols, C₅-C₁₀ saturated linear or cyclic hydrocarbons, C₆-C₈ aromatics or mixture thereof.
6. **(Original)** A process as claimed in claim 5 wherein the said solvent is a mixture of toluene and methanol.
7. **(Original)** A process as claimed in claim 1 wherein the concentration of the organosilicon compound in said solvent is in the range of 1 to 25 percent by weight.

8. **(Original)**A process as claimed in claim 1 wherein the said metallosilicate is treated with the organosilicon compound containing solution for 0.5 to 24 hours.
9. **(Original)**A process as claimed in claim 1 wherein the said solvent is recovered after metallosilicate is treated with the organosilicon compound containing solution.
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10. **(Currently Amended)** A process as claimed in claim 1 wherein amount of said water is in the range of from 1 to 200 percent, ~~preferably 2 to 100%, more preferably, 5 to 90%~~ of the mass of the metallosilicate.
11. **(Currently Amended)** A process as claimed in claim 1 wherein the said water combined metallosilicate composite is dried at a temperature of from 10 to 150°C.
-
12. **(Original)**A process as claimed in claim 1 wherein the said water combined metallosilicate composite is dried at a temperature of 50 to 150°C.
13. **(Original)**A process as claimed in claim 11 wherein the said water combined metallosilicate composite is dried at a temperature of from 80 to 130°C.
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14. **(Currently Amended)** A process as claimed in ~~any of the claims~~ claim 11 wherein the said wet metallosilicate composite is dried for from 1 to 20 hours.
-
15. **(Original)**A process as claimed in claim 1 wherein the step a) and step b) are repeated more than once.
16. **(Original)**A process as claimed in claim 1 wherein the solvent recovered is reused.
17. **(Original)**A process as claimed claim 1 wherein the said calcination is carried out at a temperature in the range of from 160 to 800°C.
18. **(Original)**A process as claimed claim 17 wherein the said calcination is carried out at a temperature in the range of from 300 to 600°C.
19. **(Original)**A process as claimed claim 17 wherein the said calcination is carried out at a temperature in the range of from 400 to 550°C.
20. **(Original)**A modified metallosilicate catalyst composite comprising of a mixture of amorphous silica, alumina and a pore size controlled metallosilicate, useful for

alkylaromatic conversion prepared by the process of claim 1.

21. **(Currently Amended)** A process for preparing a ~~modified metallosilicate catalyst composite comprising of a mixture of amorphous silica, alumina and a pore size controlled metallosilicate~~ useful for alkylaromatic conversion, the said process comprising
- a) contacting an intermediate pore metallosilicate with a water insoluble organosilicon compound in a solvent and then recovering the solvent
 - b) combining the organosilicon compound treated metallosilicate with water, the amount of water employed being in the range of from 1 to 200 percent of the mass of said metallosilicate,
 - c) drying the product from step b) at a temperature in the range of 10 to 150°C;
 - d) repeating the steps a) and b) above
 - e) calcining the product in an oxygen containing atmosphere at a temperature in the range of 160 to 800°C sufficient to remove the organic material and deposit siliceous matter on the metallosilicate.
22. **(Currently Amended)** A process for preparing a catalyst composite ~~comprising of a mixture of amorphous silica, alumina and a pore size controlled metallosilicate useful for alkylaromatic conversion~~, said process comprising
- a) contacting an intermediate pore metallosilicate with an organosilicon compound in a solvent for a specific duration and then recovering the solvent
 - b) drying the catalyst
 - c) repeating the steps a) and b) above
 - d) calcining the catalyst in an oxygen containing atmosphere sufficient to remove the organic material and deposit siliceous matter on the metallosilicate.
-
23. **(Original)** A process as claimed in claim 22, wherein said organosilicon compound used is water soluble.

24. **(Currently Amended)** A process as claimed in claim 22 wherein the said organosilicon compound is ~~aminoalkyltrialkoxysilane~~ aminoalkyl trialkylsilane.
25. **(Currently Amended)** A process as claimed in claim 24 wherein the said ~~aminoalkyltrialkoxysilane~~ aminoalkyl trialkylsilane ~~silane~~ is ~~3-aminopropyl triethoxysilane~~ 3-aminopropyl triethoxysilane.
26. **(Original)** A process as claimed in claim 22 wherein the said solvent is selected from lower aliphatic alcohols, C₅-C₁₀ saturated linear or cyclic hydrocarbons, C₆-C₈ aromatics or mixture thereof and water.
27. **(Original)** A process as claimed in claim 22 wherein the said solvent is water.
28. **(Currently Amended)** A process as claimed in claim 22 wherein the concentration of the organosilicon compound in said solvent is in the range of 1 to 99%, preferably, 2 to 50%, more preferably 5 to 25% by weight.
29. **(Original)** A process as claimed in claim 22 wherein the said metallosilicate is treated with the organosilicon compound containing solution for 0.5 to 24 hours.
30. **(Original)** A process as claimed in claim 22 wherein the said solvent is recovered after metallosilicate is treated with the organosilicon compound containing solution.
31. **(Original)** A process as claimed claim 22 wherein the said organosilicon compound treated metallosilicate composite is dried at a temperature from 10 to 150°C.
32. **(Original)** A process as claimed in claim 22 wherein said water treated metallosilicate composite is dried for at least 1 hour.
33. **(Original)** A process as claimed in claim 22 wherein the step a) and step b) are repeated at least once.
34. **(Original)** A process as claimed in claim 22 wherein the solvent recovered from the silanation step is reused for further silanation.
35. **(Currently Amended)** A process as claimed in claim 22 wherein the said calcination in said oxygen containing atmosphere is carried out at a temperature in the range 160 to 800°C.

36. **(Currently Amended)** A process as claimed in claim 22 wherein the said metallosilicate is selected from the group of pentasil family e.g. such as Ga-ZSM-5, Fe-ZSM-5, B-ZSM-5, Ga-Al-ZSM-5, Fe-Al-ZSM-5, B-Al-ZSM-5 comprises a member of the pentasil family.
37. **(Currently Amended)** A process as claimed in claim ~~22~~36 wherein the said metallosilicate-pentasil family is selected from the group of pentasil family e.g. such as consisting of: Ga-ZSM-5, Fe-ZSM-5, B-ZSM-5, Ga-Al-ZSM-5, Fe-Al-ZSM-5, B-Al-ZSM-5.
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38. **(Original)** A process as claimed in claim 36 wherein said metallosilicate is Ga-Al-ZSM-5 having silicon to aluminium ratio in the range of 150 to 600 and silicon to gallium ratio is in the range of 500 to 2000.
39. **(Original)** A process as claimed in claim 37 wherein said metallosilicate is Ga-Al-ZSM-5 having silicon to aluminium ratio in the range of 150 to 600 and silicon to gallium ratio is in the range of 500 to 2000.
40. ~~**(Cancelled) (Restricted from Prosecution)** A process for alkylaromatic hydrocarbon conversion comprising contacting the a mixture of hydrocarbons feed with a catalyst under the conditions effective to convert said hydrocarbon feed to a hydrocarbon product different from said hydrocarbon feed, wherein said catalyst is prepared by a process comprising~~
- a) ~~contacting an intermediate pore metallosilicate with an organosilicon compound in a solvent for a specific duration and then recovering the solvent~~
 - b) ~~combining the organosilicon compound treated metallosilicate with water and then drying the catalyst~~
 - e) ~~repeating the steps a) and b) above~~
 - d) ~~calcining the catalyst in an oxygen containing atmosphere sufficient to remove the organic material and deposit siliceous matter on the metallosilicate.~~
41. ~~**(Cancelled) (Restricted from Prosecution)** A process for alkylaromatic~~

~~hydrocarbon conversion comprising contacting the a mixture of hydrocarbons feed with a catalyst under the conditions effective to convert said hydrocarbon feed to a hydrocarbon product different from said hydrocarbon feed, the wherein said catalyst is prepared by the process comprising~~

- ~~a) — contacting an intermediate pore metallosilicate with an organosilicon compound in a solvent for a specific duration and then recovering the solvent~~
- ~~b) — drying the catalyst~~
- ~~c) — repeating the steps a) and b) above~~
- ~~d) — calcining the catalyst in an oxygen containing atmosphere sufficient to remove the organic material and deposit siliceous matter on the metallosilicate.~~

~~42. — (Cancelled) (Restricted from Prosecution) A process as claimed in claim 40 wherein the hydrocarbon conversion is selective alkylaromatic alkylation of with an alkylating agent selected form the lower aliphatic alcohol or lower alkenes.~~

~~43. — (Cancelled) (Restricted from Prosecution) A process as claimed in claim 42, wherein the alkylaromatic compound is toluene.~~

~~44. — (Cancelled) (Restricted from Prosecution) A process as claimed in claim 40, wherein the alkylating agent is methanol.~~

~~45. — (Cancelled) (Restricted from Prosecution) A process as claimed in claim 40 wherein the product comprises of xylenes with very high selectivity for para-xylene and the said conversion is by alkylation.~~

~~46. — (Cancelled) (Restricted from Prosecution) A process as claimed in claim 40 wherein the hydrocarbon conversion is selective alkylaromatic alkylation of with an alkylating agent selected form the lower aliphatic alcohol or lower alkenes.~~

~~47. — (Cancelled) (Restricted from Prosecution) A process as claimed in claim 42, wherein the alkylaromatic is toluene.~~

~~48. — (Cancelled) (Restricted from Prosecution) A process as claimed in claim 40, wherein the alkylating agent is methanol.~~

49. ~~(Cancelled) (Restricted from Prosecution)~~ A process as claimed in claim 40 wherein the product comprises of xylenes with very high selectivity for para-xylene and the said conversion is by alkylation

50. **(Currently Amended)** A process for preparing a modified metallosilicate catalyst composite comprising of a mixture of amorphous silica, alumina and a pore size controlled metallosilicate useful for alkylaromatic conversion, the said process comprising

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- a) contacting an intermediate pore metallosilicate with a water soluble organosilicon compound in a solvent and then recovering the solvent
 - b) drying the product from step a) at a temperature in the range of 10 to 150°C;
 - c) repeating the steps a) and b) above
 - d) calcining the product in an oxygen containing atmosphere at a ~~temeprature~~ temperature in the range of 160 to 800°C sufficient to remove the organic material and deposit siliceous matter on the metallosilicate.
-

• **Please add the following new claims:**

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51. **(New)** A process as claimed in claim 1 wherein amount of said water is in the range of from 2 to 100% of the mass of the metallosilicate.
 52. **(New)** A process as claimed in claim 1 wherein amount of said water is in the range of from 5 to 90% of the mass of the metallosilicate.
 53. **(New)** A process as claimed in claim 22 wherein the concentration of the organosilicon compound in said solvent is in the range of 2 to 50% by weight.
 54. **(New)** A process as claimed in claim 22 wherein the concentration of the organosilicon compound in said solvent is in the range of 5 to 25% by weight.
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REMARKS ON THE OFFICE ACTION OF DECEMBER 19, 2002

RESPONSE TO RESTRICTION REQUIREMENT

Applicant notes the Examiner's indication that the requirement for restriction is made final. Claims 40 – 49 are therefore subject to restriction. Cancellation of such claims herein is made without prejudice, and does not emanate from a reason related to patentability.

RESPONSE TO OBJECTIONS

In the Claims:

- **Claim Informalities**
- **The Examiner's Position:**

The Examiner has objected to claims 11 and 35 – 37 based on the following informalities: claims 11 and 35 are noted not to end with a period; claims 36 – 37 are said to have a misspelling in the word “family.”

- **Applicant's Response**

The Applicant has amended claims 11 and 35 to add a period. The misspelling of the word “family” has been corrected through amendment. Applicant therefore respectfully requests that the objections as to the pending claims be withdrawn.

RESPONSE TO REJECTIONS

In the Claims:

- **Rejections under 35 U.S.C. §112, Second Paragraph**
- **The Examiner's Position:**

The Examiner has rejected all of the pending claims, claims 1 – 39 and 50 under 35 U.S.C. §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which the applicant regards as the invention.

With respect to claims 1, 21 – 22 and 50 the Examiner asserts that the limitation “a modified metallosilicate catalyst composition comprising a mixture of amorphous silica, alumina and a pore size controlled metallosilicate” is unclear, in that it is unclear whether “amorphous silica” refers to the modifying treatment or the binder, and because it makes unclear whether the body of the claims requires the particulars of the composite.

With respect to claims 10 and 28, the Examiner asserts that the diminishing ranges recited make the claims indefinite. The Examiner further asserts that the phrase “as claimed in any of the claims 11” in claim 14 is indefinite. Likewise, the Examiner indicates that the phrase “such as” in claims 36 and 37 render the claim indefinite, making it unclear whether the limitation(s) following the phrase are part of the claimed invention or merely explanatory.

Finally in regard to claims 24 and 25 the Examiner indicates that the compounds should be named differently.

- Applicant's Response

Applicant has amended claims 1, 21-22 and 50 to more clearly indicate that only the metallosilicate is modified, and to consequently delete reference to amorphous silica in such claims. Therefore, Applicant respectfully requests that the Examiner withdraw the 35 U.S.C. §112, second paragraph, rejection in regard to these claims.

In regard to claims 10 and 28, Applicant has amended the claims such that the ranges recited therein are asserted in separate independent claims, such that claims 10, 28, and new claims 51 – 54 cover different ranges. In light of these amendments, Applicant respectfully requests that the Examiner withdraw the Examiner's 35 U.S.C. §112, second paragraph, rejections.

In respect of claim 14, the claims has been amended to make it dependent on claim 11 only, making the claim definite. Applicant, therefore, once again respectfully requests that the Examiner withdraw the Examiner's 35 U.S.C. §112, second paragraph, rejection with respect to this claim.

Regarding claims 36 and 37, the claims have been amended in such a manner that the phrase "such as" is not used. Due to the amendment, Applicant respectfully asserts that the Examiner's 35 U.S.C. §112, second paragraph, rejections based on indefiniteness have been overcome. Withdrawal of the 35 U.S.C. §112, second paragraph, rejection is respectfully sought.

Lastly in regard to claims 36 – 37 which utilize the phrases "amionalkytrialkoxysilane" and "aminpropyl triethoxysilane" appropriate correction has been made by way of amendment to these claims as well. It is asserted that the new recitations are not indefinite, and therefore that the 35 U.S.C. §112, second paragraph, rejection should be withdrawn.

- Rejections under 35 U.S.C. §103(a)
 - The Examiner's Position:

The Examiner has rejected claims 1 – 2, 5, 7, 9 – 19, 21 – 23, 26 – 28, 30 – 37 and 50 under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 5,602,066 to Beck *et al.* (“Beck '066”) in view of *Elementary Principles of Chemical Processes* by Felder *et al.* (“Felder *Elementary Principles Text*”).

In respect of the independent claims in such group, the Examiner finds that Beck '066 teaches all elements of the claims except for recovery of the solvent. The Examiner asserts that it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the method of Beck '066 in light of the teachings of the Felder *Elementary Principles Text* to recover the solvent stripped from the “selectivated catalyst such as for recycle.” While acknowledging that the Beck *et al.* reference does not teach that the solvent is recovered as required by claims 1, 21 – 22 and 50, the Examiner asserts that one would have been motivated to do so “because of the teaching by Felder *et al.* that such a recovery/recycle is conventional and would result in a more economical process, i.e. would not continually need to supply fresh solvent to the selectivation process.”

In regard to all dependent claims referencing independent claims 1, 21 – 22 and 50, the Examiner asserts that their recitations are also obvious. With regards to claims 10 and 21, the Examiner further acknowledges that if Beck '066 is modified to teach solvent stripping, that the modified Beck '066 does not specifically teach the amount of water used during step (c) of claim 1, from which claim 10 depends, and, evidently, as used at step (b) of claim 21 (albeit step (c) is referenced with respect to both claims). The Examiner argues, however, that Beck '066 does recognize the use of water during the washing step to be “a result effective variable.” Based on such argument, the Examiner reasons that “[i]t would have been obvious to one having ordinary skill in the art at the time the invention was made to choose the instantly claimed ranges through process

optimization.” In regard to claim 19, which ultimately depends from claim 1, the Examiner further acknowledges that the Beck '066 reference does not specifically teach the calcination temperature range recited. However, the Examiner asserts that such range is within the disclosure of Beck '066 as Beck '066 recites a calcination temperature following washing and drying steps, of at least 200 °C for at least 1 hour. With respect to any encompassing or overlapping range with that defined in claim 19, the Examiner asserts that such ranges are *prima facie* obvious as being optimizations.

In regard to dependent claims 3 – 4, 6, and 8 which depend on independent claim 1, and dependent claim 29, which depends on independent claim 29, the Examiner recites further references to make a case for an obviousness rejection.

Claims 3, 4, and 6 have been rejected under 35 U.S.C. §103(a) as being unpatentable over Beck '066 in view of the Felder *Elementary Principles* Text as applied above, and further in view of U.S. Patent No. 6,084,096 to Li *et al* (“Li '096”). The Examiner acknowledges with respect to these claims that Beck '066 in view of the Felder *Elementary Principles* Text, *i.e.* the “modified Beck '066”, does not teach that the organosilicon compound is a tetralkoxy silane, and not tetraethoxy silane, as required by claims 3 – 4, or that the solvent is a mixture of toluene and methanol, as required by claim 6. However, the Examiner argues that Li '096 teaches that suitable selectivation agents include tetraalkoxy silanes, including tetraethoxy silane, and further teaches suitable solvents include aliphatic hydrocarbons, as well as toluene and methanol. Based on such “teaching” the Examiner asserts that “[i]t would be obvious to one having ordinary skill in the art at the time the invention was made to have further modified the method of Beck *et al.* to include the use of the selectivating agents and solvents taught by Li *et al.*

Claims 8 and 29 have been rejected under 35 U.S.C. §103(a) as being unpatentable over Beck '066 in view of the Felder *Elementary Principles* Text as applied above, and further in view of U.S. Patent No. 5,365,004 to Beck *et al.* (“Beck '004”). The

Examiner acknowledges that modified Beck '066 does not teach the duration of the selectivation process as required by claims 8 and 29. However, the Examiner asserts that Beck '004 details the preparation of a silicon-selectivated ZSM-5 catalyst, and that “[i]t would have been obvious to one having ordinary skill in the art at the time the invention was made to further modify the method of Beck et al. in light of the teachings of Beck et al. '004” based on a motivation of having a reasonable expectation of success from the combination.

- Applicant's Response

Applicant respectfully traverses the Examiner's rejection under 35 U.S.C. §103(a) of the claim group 1 – 2, 5, 7, 9 – 19, 21 – 23, 26 – 28, 30 – 37, and 50 asserting in part that the Examiner has provided inadequate motivation for the combining the references cited against the claims, and asserting that a person of ordinary skill in the art when viewing the claim as a whole would not find any of these claims obvious even in light of the combinations recited.

Claims 1, 21, 22 and 50 are the only independent claims in the claim group 1 – 2, 5, 7, 9 – 19, 21 – 23, 26 – 28, 30 – 37 and 50 which has been rejected by the Examiner under 35 U.S.C. §103(a). Applicant respectfully asserts that the Examiner's reasoning for rejecting these claims is based on a flawed understanding of the invention, and the embodiments asserted in the claims.

In determining that the only difference between the claimed subject matter of independent claims 1, 21, 22 and 50 from Beck '066 resides in the recovery of solvents, the Examiner fundamentally misconstrues the embodiments asserted. *Inter alia*, the novelty of these claimed embodiments upon avoiding multiple calcination during the multiple silanation procedure (see page 5, paragraph 5, lines 4 -6 and page 10, last paragraph, of the specification of the application). The references cited by the Examiner make clear a fundamental belief by those in the prior art – that is, that calcination should

occur after each impregnation (See Beck '066 at column 3, lines 65 - 67; column 4, lines 1 to 9; column 4, lines 46 to 51; column 6, lines 5 - 8; and column 6, lines 34 - 39, claims 1, 8 and 9). Respectfully, the embodiment asserted is a radical departure from the prior art belief that calcination at the end of each impregnation was essential to the salination process. Each of the claims 1, 21 and 22 avoid multiple calcination during multiple silanation procedures. The avoidance of calcination not only improves efficiency of the silanation process, but results in avoiding effluents, saves material and energy costs, and provides higher para-selectivity in the paraxylene production process (see examples in the specification of the patent application).

Thus, Applicants respectfully assert that independent claims 1, 21, 22 and 50 are patentable over the prior art in disclosing processes that avoid calcination after each impregnation, and that for this reason alone, irrespective of Applicant's traverse with respect to lack of motivation for combining references to teach the recovery of the solvent, makes these claims patentable. Therefore, Applicant also asserts that all claims depending from such independent claims, that is, dependent claims 2 - 20 (depending on claim 1) and dependent claims 23 - 39 (depending on claim 22) are also patentable, as claiming something less.

While claims 10 and 21 are believed to be patentable on such ground alone, Applicant disagrees with the Examiner's assessment with respect to the water ranges recited in such claims being a result effective variable which is made obvious by Beck '066. Applicant respectfully asserts that Beck '066 discloses the use of water solely as a washing agent (See, Beck '066 at col. 3, lines 30 - 64). That is, the intended purpose of the use of water in Beck '066 is in order to remove the fines from the catalyst surface and therefore reduce the time required to achieve the targeted paraselectivity. Water is not used as a reactant. Furthermore, the washing with water in Beck '066 is performed after the calcination step of salination. Water in these embodiments is used to enhance the anchoring of the organosilicon compound on the catalyst surface (see, page 10, paragraph 2, of the specification of the application). Water is believed to regenerate lost acidic sites

on either or both the internal and external catalyst surface that occurs due to dehydroxylation. Regeneration of these lost acidic sites help to anchor silica thereon. In these embodiments, water is used during silanation of the catalyst, regenerating not only lost acidic sites but also allowing for easier anchoring of the organosilicon compound to the acidic sites (both existing and regenerated) on the external surface of the catalyst, for example. The subsequent and final calcination of the water treated catalyst results in the decomposition of the deposited organosilicon compound into silica. This prevents the access of the acidic sites (both existing prior to and regenerated during silanation) on the external surface of the catalyst to the paraxylene produced, thereby ensuring greater paraselectivity for the catalyst.

It should also be noted that Beck '066 washes after the calcination step of silanation. The washed catalyst is then dried and calcined again. The embodiments of claims 10 and 21 allow for treatment prior to calcination.

Respectfully the Li '096, Beck '004, and Felder *Elementary Principles* Text (and Wu '770) references provide no teaching or disclosure in regard to the ability to avoid calcination after each impregnation, or the use of water as a reactant before drying or calcination in order to improve the efficiency of the silanation process and improve the paraselectivity of the catalyst. In fact, they only point to conventional thought with respect to these matters (See, Beck '004 at col. 3, lines 65 – 67, col. 7, lines 12 – 16, examples 6, 7 and 8, as well as abstract; Li '096 at col. 3, lines 55 – 67, col. 4, lines 1 – 3; and Wu '770 at col. 1, lines 50 – 64, col. 3, lines 22 – 26, lines 63 – 67, col. 4, lines 22 – 31, example 1, claims 1 and 21).

Applicant therefore respectfully requests that the 35 U.S.C. §103(a) rejection of the claim group 1 – 2, 5, 7, 9 – 19, 21 – 23, 26 – 28, 30 – 37, and 50, claim group 3 - 4 and 6, and claim group 8 and 29, be withdrawn.

- Rejections under 35 U.S.C. §102(b)/103(a)

- The Examiner's Position:

The Examiner has rejected claim 20 as being either anticipated by Beck '066 or U.S. Patent No. 6,066,770 to Wu *et al.* ("Wu '770"). The Examiner asserts that Beck '066 discloses a selectivated ZSM-5 catalyst that may be combined with silica, alumina, or silica in combination with alumina, while Wu '770 discloses a selectivated ZSM-5 catalyst which is combined with a binder such as silica-alumina. The Examiner reasons that the disclosed products in such references and the instantly claimed product are "essentially the same" but that even if differences could be shown for the product of the product-by-process claim, that the differences "would have been obvious to one of ordinary skill in the art as a routine modification of the product in the absence of a showing of unexpected results.

- Applicant's Response

Claim 20 is a product-by-process claim. Claim 20 depends on claim 1. As claim 1 is patentable for the reasons set forth below, it is asserted that this dependent claim is also patentable. That is if claim 1 is novel and non-obvious then the novelty of claim 20 should also stand.

- Allowable Subject Matter

- The Examiner's Position:

The Examiner has indicated that claims 24 – 25 and 38 – 39 would be allowable if rewritten to overcome the 35 U.S.C. §112, second paragraph, rejections set forth above and to include all of the limitations of the base claim and any intervening claim.

- Applicant's Response

Claims 24 – 25 and 38 – 39 have been rewritten to overcome the 35 U.S.C. §112, second paragraph, rejections as set forth above. As it is firmly believed that claim 22 from which they all ultimately depend is independently patentable, as set forth above, Applicants do not believe there is need to rewrite these dependent claims in independent form. Early allowance of these claims is requested.

CONCLUSIONS

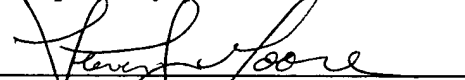
Accordingly, it is respectfully submitted that the claims under consideration are clearly patentable over the references of record. It is submitted that the above-identified patent application is in condition for allowance. Early notification of the allowability of the pending claims is courteously solicited.

- PETITION FOR EXTENSION OF TIME AND FEES

Applicant respectfully petitions for an extension of time corresponding to three months from the shortened statutory response period. A check in the sum of \$930 is enclosed which is believed to cover the extension fee for a large entity. The Assistant Commissioner, however, is authorized to charge payment of any fees that may be required 37 C.F.R. §1.16 in connection with the paper(s) transmitted herewith, or credit any overpayment of the same, to Deposit Account No. 033975.

Date: June 19, 2002

Respectfully submitted,



Steven J. Moore, Reg. No. 35,959

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